Task Order 6

DRBC ANSDU Support Agreement

December 3, 2018

Background

This is **Task Order 6** under the Agreement dated August 16, 2017 between the Delaware River Basin Commission (Commission or DRBC) and the Academy of Natural Sciences of Drexel University (ANSDU) to support the DRBC's Biomonitoring and Assessment Program.

Task Order Description

In the current version of its nutrient criteria development plan, DRBC has proposed using the Delaware Estuary Eutrophication model (under development) to set proposed criteria for ambient nitrogen and phosphorus in the Delaware Estuary. Under this proposal, the model would help define the ambient concentrations and species of nitrogen and phosphorus that would be necessary to achieve new dissolved oxygen (DO) targets (also under development). Thus, under this approach, the nitrogen and phosphorus criteria would be driven by DO endpoints.

Some stakeholders have pointed out, however, that there could be other important impacts of elevated nutrients that are not tied to DO. These stakeholders have expressed concern that setting nutrient criteria based solely on DO may not address other estuary ecological impacts from nutrients.

Under this task order, we are seeking assistance from ANSDU in querying literature and experts with a goal of developing a limited prioritized list of non-DO estuary nutrient endpoints that could inform nutrient criteria selection.

Characteristics of non-DO nutrient endpoints that would increase their value in setting criteria would include:

- Measurable effect(s);
- High likelihood of being relevant in the Delaware Estuary;
- Sufficient current knowledge to inform nutrient criteria concentration selection during the period of model development and DO criteria selection.

Possible non-DO nutrient endpoints suggested by stakeholders are included below, although we acknowledge that the final list may or may not include these endpoints:

- Epiphytic algal density impacts to submerged aquatic vegetation;
- Diatom community distribution and abundance;
- Shellfish food quality considerations;
- Harmful algal blooms;
- Estuarine species sensitivities.

This effort is separate from drinking water nitrate MCLs and ammonia ambient toxicity recommended criteria, which are already well established. Task approaches could include literature search and summary, identification and engagement of other experts, and coordination with local stakeholders. If appropriate, ANSDU may recommend staging this effort as two separate task orders.

Deliverable

The deliverable for this task order will be a summary report.

1. ANSDU shall submit an initial draft version of the report.
2. DRBC will review the initial draft version of the report and coordinate review by advisory committees and other local stakeholders and experts for comment. DRBC will submit a set of consolidated comments to ANSDU.
3. ANSDU shall consider the comments and develop and submit a final version of proposed methodology along with a limited response to comments document.

Time frame

ANSDU should submit the initial draft version of the proposed methodology within 120 calendar days of the issuance of this task order. ANSDU should submit the final version of proposed methodology along with a limited response to comments document within 30 days following receipt of consolidated comments from DRBC.